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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,727	12/28/2001	Howard Scott Forstrom	0918.0026C	4109

27896 7590 08/02/2006

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EXAMINER	
SZYMANSKI, THOMAS M	

ART UNIT	PAPER NUMBER
2134	

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,727	FORSTROM ET AL.	
	Examiner	Art Unit	
	Thomas Szymanski	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,7-11,18-21,24-27,32,33 and 35-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-36, 3, 7-11, 18-21, 24-27, 32-33, and 37-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 3, 7-11, 18-21, 24-27, 32-33, and 35-44 have been examined.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 35-36, 3, 7-11, 18-21, 24-27, 32-33, and 37-44 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The recitation of "negotiating, between the application layer processing and network and transport layer processing" is indefinite since it is unclear if the applicant intends for negotiating between these separate entities/processes or for negotiating (dissemination of variables) to occur between the processing for these stated layers of the protocol. As discussed previously in relation to the disclosed new matter, which has been removed by amendment, the act of negotiating inherently infers exchange of information between at least two parties. The present application clearly provides for receiving information from a first device via a network, wherein a watermark is used to convey such information, but does not clearly disclose how such negotiating can take place between the network and the devices. For purposes of examination the examiner has taken this recitation to mean that the watermark is located within layers 5 and 6 of the OSI model, thus allowing for the negotiation parameters to be disseminated between the application layer processing and transport layer processing.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3, 8-11, 18-21, 24-27, 32-33, and 35-36, 37-40, 42, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone et al European Patent No. 1098522 (hereinafter "Stone"), further in view of Levy United States Patent Application Publication No. 2001/0044899 (hereinafter "Levy"), and further in view of Transport Layer Security From Wikipedia (hereinafter "TLS").

7. Stone teaches a method of watermarking a signal with a functional ID that refers to a set of attributes but fails to disclose watermarking the signal with the specific attributes themselves.

8. Levy teaches transmission of multimedia signals wherein the signals are watermarked to be robust and compatible with many systems.

9. Compatibility of media with legacy systems and the robustness of that media to be used on a variety of different systems is a desirable advantageous feature wherein a simple watermark may be used to employ such robustness (Levy abstract, paragraphs 6-10, 12-17).

10. It would have been obvious to one or ordinary skill in the art at the time of the applicant's invention to combine the systems of Levy and Stone for the advantages of increased compatibility as outlined above. The combination of these two systems comprises employing the system of Levy upon the watermarked media of Stone to achieve the improved watermarked media.

11. The combination of Stone and Levy while teaching embedding (Levy paragraphs 16-19, 28-29) fail to explicitly teach embedding the watermark after application processing but prior transport layer processing.

12. However, in related art, TLS teaches negotiation of parameters by cryptographic algorithms during this phase of processing (TLS pg 1 line 7 – pg 2 line 29). The combination teaches using watermarking to convey parameters (TLS pg 2 lines 7-8) as taught by Stone and Levy within the TLS protocol to establish the secure connections.

13. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the system of Stone and Levy with TLS for the advantages of increased security as outline on page 2 lines 20-29.

14. Regarding Claims 35 and 36: Generating at a first device information concerning the communication capabilities of the first device (Stone Fig 1, pg 2 lines 5-31, abstract, Levy Fig 1 paragraphs 12-13, 15-23, 25-29, 32, 34-41) The communication capabilities of the first device relate to the manner in which the media content is encoded and sent as related to specifications of the device and content. The combined reference teaches that information originally associated with the media is decoded and may be placed back into the media in a new format. This process then dictates that the information

associated with the original watermark is recovered and placed into the new watermark that is combined with the stream so as to produce the more robust markings. As shown that information related to the original watermark specifies attributes of the first device that relate to its communication capabilities.

Combining said information with a data stream "after application layer processing but prior to network and transport layer processing" to produce a message (Stone pg 2 line 8, Levy Fig 1 paragraphs 12-23; TLS pg 1 line 1 – pg 2 line 35) TLS is used between the application layer and above the transport layer specifically see pg 2 lines 30-31.

Transmitting the message to the second device (Levy Fig 1, Stone pg 3 lines 9-10, fig 1 p717)

Receiving the message from the first device (Stone Fig 1, pg 2 lines 11-14, Levy Fig 1)

The systems inherently provide for the reception and decoding of the provided watermarking.

Extracting said information from the message to determine the communication capabilities of the first device (Stone Table 1, Fig 1, pg 2 lines 5-14, Levy Fig 1, paragraph 26, 28-29, 36-41)

Negotiating with the first communication device parameters for communication between the first communication device and second communication device (Stone Table 1, Fig 1, pg 2 lines 5-14, Levy Fig 1, paragraph 26, 28-29, 36-41) The process of negotiating as understood within the applicant's invention comprises the second device receiving the message, and negotiating by the process of differentiating from the provided attribute information as to what format the received content is in and how to decode that

information based on those attributes. As described in the provided references all information concerning the encoding and source of the data is provided and inherently extracted by the receiving party in order to use the data.

Negotiating between the first communication device and second communication device communication parameters to be used for subsequent communication between the first and second devices (Stone Table 1, Fig 1, pg 2 lines 5-14, Levy Fig 1, paragraph 26, 28-29, 36-41) The continual decoding of the information is an inherent function of the receiving party.

15. Regarding Claims 3, and 9: the attribute is a type of voice recorder (vocoder), first device revision indicator, first device identifier (Stone Table 1, pg 2 lines 5-6, Levy Fig 1, para 12-23, 26, 28-29, 36-41) The separate parts of the label identify all of these features, furthermore, Levy provides for adding the same information in relation to the improved watermark.

16. Regarding Claim 8: At the first device compressing the data stream (Stone pg 3 lines 9-10, Levy Fig 1 Paragraphs 15-23, 28-29, 35-38) Stone states that the utilizer 717 implements the watermarked data stream by transmission or any other possible means. Through the transmission of such a format the data would be compressed as provided for by Stone. The Levy reference further provides for, as a purpose of implementation, the compression of the data stream and application of the watermark either before or after such compression into an appropriate format so as to not loose the quality of such a marking.

Detecting capability of first device (Stone Table 1 pg 2 lines 5-6, Levy Fig 1, para 12-23, 26, 28-29, 36-41) The details of the source of the data are provided to the destination via the affixed information.

Generating a signature based on capability and applying as a watermark (Fig 1, pg 2 lines 5-15, Levy Fig 1, para 12-23, 26, 28-29, 36-41) as the applicant has acted as their own lexicographer to define a signature as defined in lines 7-8 of page 5 of the specification Levy provides for placement of the attributes within the data as a manner of watermarking the data thus according to MPEP 7.34.02 the claim is anticipated.

17. Regarding Claim 10: applying the signature to masked non-critical fields (Stone pg 7 lines 16-19, 37-40, 47-54, Levy Fig 1, para 12-23, 26, 28-29, 36-41) Stone provides for embedding the watermark within the data so that it may be imperceptible as such not modifying any critical fields of data, further Stone et al states that the watermark can be embedded within a header or data fields of the given stream. The methods used to insert the watermark by way of it being imperceptible constitute a form of masking the data within the stream by applying the bits in a mask format to the data stream. Levy provides for leaving the original watermark in place (see paragraph 26) while applying the improved watermark as an imperceptible layer as discussed above.

18. Regarding Claim 11: Data stream includes header information and multimedia information and the watermark is contained in the multimedia content (Stone pg 7 lines 16-19, Levy Fig 1, paragraphs 7, 16, 18-20, 35-38, 41) As stated by Stone the watermark may be contained within the multimedia content. In accordance with

compatibility of a newly placed watermark the Levy system is governed by the manner in which the original watermark was placed as related by the attributes.

19. Regarding Claim 18: At the second device determining a communication capability attribute contained in said information concerning the communication capabilities of the first device and comparing the attribute of the first device with the second device (Stone Fig 1, pg 2 lines 11-14, Levy Fig 1, paragraph 36) As is necessary within any such system for the basic functionality to be possible there is a means for the reception and use of the produced data within which the system functions as necessary within all basic features such as determination and negotiation of the protocols necessary for the produced data. Such steps are necessary for the decryption and implementation to be viable, otherwise the system would not function upon the initial method.

20. Regarding Claims 19-21: At the second device determining a communication capability attribute common to both the first device and the second device based on said comparing; Generating a parameter for use in communicating between the first device and the second device based on the determined common communication capability attribute; Recovering from the received message said data stream based on the parameter (Levy Fig 1, paragraphs 36, 15-23, 25-29, and 34-41; Stone Fig 1, pg 2 lines 11-14) Such a parameter is anticipated by both the watermark key that is recited within Levy as well as the usage of any particular codec which requires identification for purposes of implementation. Additionally, other parameters such as decryption keys or compression algorithms that are implemented require an equivalent parameter.

21. Regarding Claim 37-40 (new): The method of claim 35, wherein said combining comprises substituting a plurality of bits representing said information for the least significant bits of linear prediction compression coefficients associated with audio content contained in said multimedia data stream; a jitter index, the least significant bits of a gain index, the least significant bits of Fourier Magnitudes; or the least significant bits of reflection bits, associated with a compression technique for audio content contained in said multimedia data stream; substituting a plurality of bits representing said information for the least significant bits of unrestricted motion vectors and Discrete Cosine Transform (DCT) coefficients associated with motion video content contained in said multimedia data stream; substituting a plurality of bits representing said information for the least significant bits of the quantized Discrete Cosine Transform (DCT) coefficients associated with still images contained in said multimedia data stream (Levy paragraphs 18-21, 24, 37) As recited by Levy the watermark is placed into the characteristics of the data to facilitate the imperceptibility of the mark. Levy states that by modifying such attributes as perceptual domain attributes and/or transform domain frequency coefficients the embedding may take place. As seen from the recitation of Levy in the cited passages the intent is to embed the watermark with minimal impact on the perceptibility by inserting it in the exact same manner as disclosed above.

22. 42, 44 (new) The method of claim 19, wherein at said second device, said determining comprises determining the highest level of communication capability in common to the first device and the second device for use in communication between

the first and second devices (TLS pg 2 lines 7-8) As stated in TLS the attributes indicate the highest version supported.

23. Claims 24-27, 32-33, and 36 are a system implementation of the above recited method and are rejected on the same grounds.

24. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stone and Levy as applied to claim 1 above, and further in view of Kari et al Publication No. WO 97/48212.

25. Regarding Claim 7: Stone and Levy teach a system for the watermarking of a compressed data stream based upon attributes but fails to teach the use of a plurality of particular algorithms.

26. However, Kari et al teaches a system (pg 4 lines 4-21) for the transmission of compressed data with an identifier for identification of one of a plurality of possible algorithms used to compress the given data stream.

27. It is desirable within any system to provide for means of increased processing speed and efficiency while maintaining a high level of security. The implementation of such a system so as to avoid bottlenecks (Kari et al pg 1 lines 30-35) and maintain security is desirable.

28. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the system of Kari et al with that of Stone et al for the advantages of improved transmission time and performance so as to avoid possible

bottlenecks that may be encountered while maintaining the necessary security of the system through the implementation of a plurality of possible compression algorithms.

29. Claims 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone, Levy, and TLS as applied to claim 35 above, and further in view of Fujiwara United States Patent No. 6,731,776 (hereinafter "Fujiwara").

30. The combination above teaches a system for embedding watermarks but fails to explicitly teach embedding the watermarks using a logical or operation.

31. However, in related art, Fujiwara teaches a system of embedding watermarks using a logical or operation, wherein the Fujiwara system advantageously performs high speed watermarking without unduly increasing memory requirements (Col 1l ine 65 – Col 2 line 20). Such a system is advantageous for outputting watermarks in a more efficient manner than previously described.

32. It would have been obvious to one or ordinary skill in the art at the time of the applicant's invention to combine Stone, Levy, and TLS with Fujiwara for the above stated advantages.

33. Regarding Claim 41, 43 (new): Combining comprises logically OR'ing said information with the multimedia data stream at bit positions of the multimedia data stream chosen to have minimal impact on quality of the multimedia data stream at the second device.

Response to Arguments

34. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

35. The applicant has argued that the existing references do not teach replacing the least significant bits of data, however, as seen from the recitation of Levy as cited above in the rejection of those associated newly added claims Levy clearly recites embedding the watermark data in the perceptibly least significant portions of the data, which anticipates such a recitation.

36. All other arguments are addressed by the added references as such it is believed on current issues have been addressed above.

Conclusion

37. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of art disclosed by the references cited and the objections made. Applicant must show how the amendments avoid such references and objections. See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Szymanski whose telephone number is 571-272-8574. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on 571-272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMS

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